

What is claimed is:

1. A method of operating an entertainment system having a controller that controls a plurality of controllable components in response to a plurality of user interface devices, wherein the controllable components are dispersed among a plurality of locations
5 and are interconnected via interconnections, the method comprising:
 - identifying to the controller attributes for the controllable components;
 - identifying to the controller locations of the controllable components and interconnections therebetween;
 - wherein the controller generates graphical user interfaces for the user interface

10 devices containing commands for operating the controllable components, and wherein the commands included in the graphical user interfaces of the user interface devices vary based on locations of the user interface devices as well as at least some of the identified controllable component attributes, locations and interconnections; and

15 controlling the controllable components by executing the commands of the graphical user interfaces.
2. The method of claim 1, wherein the identification of controllable component attributes includes supplying an attribute data file to the controller for at least one of the controllable components.
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3. The method of claim 1, wherein the identification of controllable component attributes includes inputting to the controller the attributes for at least one of the controllable components, and wherein the controller creates an attribute data file for the one controllable component based upon the inputted attributes.
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4. The method of claim 3, wherein the attribute data file is an XML file with a published schema.
5. The method of claim 3, wherein the identification of attributes for the at least
30 one controllable component further includes:

generating menu screens that list a plurality of attributes to choose from, and selecting from the listed attributes those corresponding to the at least one controllable component using an input device.

5 6. The method of claim 1, wherein at least one of the controllable components is capable of translating signals from one type of signal to another type of signal, and wherein the translation capability is one of the attributes identified to the controller.

10 7. The method of claim 1, wherein the identification of each of the locations of the controllable components includes:

generating a menu screen corresponding to the location; and
inputting onto the menu screen, using an input device, the identification of at least one of the controllable components located at the location.

15 8. The method of claim 1, wherein:

the identification of controllable component attributes includes creating an attribute data file for each of the controllable components based upon the attributes thereof; and
the identification of the controllable component locations further includes:

20 generating one or more location menu screens;
selecting manufacturer and model information of the controllable components on the one or more location menu screens using an input device, and
inputting on the one or more location menu screens the names of the attribute data files using the input device.

25 9. The method of claim 1, wherein the identification of each of the interconnections of the controllable components includes:

generating one or more menu screens for the controllable components; and
for each of the controllable components, inputting on the one or more menu screens the identification of each of the interconnections connected thereto using an input device.

10. The method of claim 9, wherein the interconnections identified to the controller correspond to physical wires connected between the controllable components.

11. The method of claim 10, wherein the identification of the interconnections
5 includes a type or quality of the physical wires.

12. The method of claim 1, wherein for at least two of the controllable components, the interconnections therebetween include a plurality of different connection paths.

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13. The method of claim 3, wherein the commands for operating the controllable components are generated from the attribute data files thereof.

14. The method of claim 1, wherein for each of the user interface devices, the graphical user interface thereof contains commands only for those of the controllable components that have an effect on the location of the user interface device.

15. The method of claim 1, wherein:
the locations of the controllable components and user interface devices are rooms
20 within a structure;

for each of the user interface devices, the graphical user interface thereof contains commands only for those of the controllable components that have an effect on any of the controllable components that are located in the same room as the user interface device.

25 16. The method of claim 1, wherein at least one of the locations includes one or more of the controllable components that are output devices that display video and/or play sounds, and wherein the user interface device located in the one location contains commands only for those of the controllable components that are interconnected with the one or more output devices.

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17. The method of claim 1, further comprising:
identifying to the controller attributes for an additional controllable component;
identifying to the controller a location of the additional controllable component and
any interconnections thereof with any of the plurality of controllable components;
5 wherein the controller modifies the graphical user interface of at least one of the user
interface devices to add commands for operating the additional controllable component.

18. The method of claim 1, wherein the controller generates a schematic diagram
of the plurality of controllable components and the interconnections thereof based upon the
10 identified attributes and the identified interconnections.

19. The method of claim 1, wherein the identification to the controller of the
interconnections includes identifying a plurality of wiring rules to the controller, and wherein
the controller generates a schematic diagram of the plurality of controllable components and
15 the interconnections thereof based upon the identified attributes and the identified wiring
rules.

20. The method of claim 1, wherein the identification of interconnections to the
controller includes identifying a plurality of wiring rules to the controller, and wherein the
20 controller generates a list of the interconnections between the controllable components based
upon the identified wiring rules.

21. The method of claim 20, further comprising:
modifying the wiring rules, wherein the controller modifies the list of
25 interconnections based upon the modified wiring rules.

22. The method of claim 1, wherein the controller generates a schematic diagram
of the plurality of controllable components and some but not all of the interconnections
thereof based upon the identified attributes and the identified interconnections.

23. The method of claim 1, wherein the controller generates a parts list of the plurality of controllable components and the interconnections thereof based upon the identified attributes and the identified interconnections.

5 24. The method of claim 1, wherein the controller generates a list of wire lengths used to form the identified interconnections based upon the identified locations of the controllable components.

10 25. The method of claim 1, wherein the controller generates elevational views of at least some of the controllable components and locations thereof based upon the identified locations of the controllable components.

26. The method of claim 1, wherein at least some of the identified locations for the controlled components includes locations within one or more mounting racks.

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27. The method of claim 26, wherein the identification of locations to the controller includes identifying a plurality of location rules to the controller, and wherein the controller generates a list of the locations of the controllable components in the one or more mounting racks based upon the identified location rules.

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28. The method of claim 27, further comprising:
modifying the location rules, wherein the controller modifies the list of controllable component locations based upon the modified location rules.

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29. The method of claim 1, wherein the controller generates a test plan for testing the interconnections based upon the identification of the interconnections.

30. The method of claim 29, wherein the test plan includes some but not all of the identified interconnections.

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31. The method of claim 29, further comprising:

testing the interconnections, wherein the controller generates a schematic diagram of the plurality of controllable components and the interconnections thereof based upon the identified attributes and the identified interconnections, and wherein the controller separately highlights which of the interconnections have passed the testing, which of the interconnections have failed the testing, and which of the interconnections have not yet been subjected to the testing.

5 32. An entertainment system, comprising:

10 a plurality of controllable components that are dispersed among a plurality of locations, wherein each of the controllable components has attributes associated therewith;

a plurality of interconnections between the controllable components;

a plurality of user interface devices that are dispersed among at least some of the plurality of locations; and

15 a controller that generates graphical user interfaces for the user interface devices, wherein the graphical user interfaces include commands for operating the controllable components that vary among the graphical user interfaces based on the locations of the user interface devices as well as at least some of the controllable component attributes, locations and interconnections, and wherein the controller controls the plurality of controllable components in response to the graphical user interface commands executed on the user

20 interface devices.

33. The system of claim 32, further comprising:

an input device to identify to the controller the attributes and the locations of the 25 controllable components, and the interconnections therebetween.

34. The system of claim 32, wherein the controllable component attributes are stored in attribute data files that are accessible by the controller.

35. The system of claim 34, wherein the attribute data files are in an XML file format.

36. The system of claim 33, wherein:

5 the controller generates a menu screen on the input device for inputting to the controller the attributes for at least one of the controllable components, and wherein the controller creates an attribute data file for the one controllable component based upon the inputted attributes.

10 37. The system of claim 36, wherein the menu screen lists a plurality of attributes from which to choose from for the one controllable component.

38. The system of claim 32, wherein at least one of the controllable components includes an attribute of translating signals from one type of signal to another type of signal.

15 39. The system of claim 33, wherein the controller generates at least one location menu screen on the input device in which location information for at least one of the controllable components can be entered.

20 40. The system of claim 33, wherein the controller generates at least one menu screen on the input device in which a manufacturer and a model of one of the controlled components can be selected from a list of plural manufacturers and models.

25 41. The system of claim 40, wherein the controllable component attributes are stored in attribute data files that are accessible by the controller, and wherein the at least one menu screen includes a data field in which a name of one of the attribute data files can be identified.

42. The system of claim 33, wherein the controller generates one or more menu 30 screens on the input device in which identifications of the interconnections can be entered.

43. The system of claim 42, wherein the interconnections are physical wires connected between the controllable components.

5 44. The system of claim 43, wherein the identifications of the interconnections include a type or quality of the physical wires.

10 45. The system of claim 32, wherein for at least two of the controllable components, the interconnections therebetween include a plurality of different connection paths.

46. The system of claim 34, wherein the commands for operating the controllable components are generated from the attribute data files thereof.

15 47. The system of claim 32, wherein for each of the user interface devices, the graphical user interface thereof contains commands only for those of the controllable components that have an effect on the location of the user interface device.

20 48. The system of claim 32, wherein:
the locations of the controllable components and user interface devices are rooms within a structure;

25 for each of the user interface devices, the graphical user interface thereof contains commands only for those of the controllable components that are located in the same room as the user interface device and for those of the controllable components that have an effect on any of the controllable components that are located in the same room as the user interface device.

30 49. The system of claim 32, wherein at least one of the locations includes one or more of the controllable components that are output devices that display video and/or play sounds, and wherein the user interface device located in the one location contains commands

only for the output devices and for those of the controllable components that are interconnected with the output devices.

50. The system of claim 33, wherein in response to an additional controllable component being identified to the controller via the input device, the controller modifies the graphical user interface of at least one of the user interface devices to add commands for operating the additional controllable component.

51. The system of claim 32, wherein the controller generates a schematic diagram of the controllable components and the interconnections thereof based upon the attributes and the interconnections thereof.

52. The system of claim 33, wherein the controller generates a menu screen on the input device containing a plurality of changeable wiring rules, and wherein the controller generates a schematic diagram of the plurality of controllable components and the interconnections thereof based upon the attributes and the wiring rules.

53. The system of claim 33, wherein the controller generates a menu screen on the input device containing a plurality of changeable wiring rules, and wherein the controller generates a list of the interconnections between the controllable components based upon the wiring rules.

54. The system of claim 53, wherein the controller modifies the list of interconnections in response to modifications of the wiring rules implemented via the input device.

55. The system of claim 32, wherein the controller generates a schematic diagram of the plurality of controllable components and some but not all of the interconnections thereof based upon the controllable component attributes and the interconnections.

56. The system of claim 32, wherein the controller generates a parts list of the plurality of controllable components and the interconnections thereof based upon the controllable components attributes and the interconnections.

5 57. The system of claim 32, wherein the interconnections are physical wires connected between the controllable components, and wherein the controller generates a list of lengths of the physical wires based upon the locations of the controllable components.

10 58. The system of claim 32, wherein the controller generates elevational views of at least some of the controllable components and locations thereof based upon the locations of the controllable components.

15 59. The system of claim 33, wherein at least some of the locations for the controlled components include locations within one or more mounting racks.

60. The system of claim 59, wherein the controller generates a menu screen on the input device containing a plurality of changeable location rules, and wherein the controller generates a list of the locations of the controllable components in the one or more mounting racks based upon the location rules.

20 61. The system of claim 60, wherein the controller modifies the list of controllable component locations in response to modifications of the location rules implemented via the input device.

25 62. The system of claim 33, wherein the controller generates a test plan for testing the interconnections

63. The method of claim 62, wherein the test plan includes some but not all of the identified interconnections.

64. The method of claim 62, wherein the controller generates a schematic diagram on the input device of the plurality of controllable components and the interconnections thereof based upon the attributes and the interconnections, and wherein the controller separately highlights on the schematic diagram which of the interconnections have passed testing according to the test plan, which of the interconnections have failed testing according to the test plan, and which of the interconnections have not yet been subjected to testing according to the test plan.

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